



King County
Department of Development
and Environmental Services
900 Oakesdale Avenue Southwest
Renton, Washington 98055-1219
206-296-6600 TTY 206-296-7217

2001 Washington State Energy Code
2000 Ventilation and Air Quality Code

Energy Residential Submittal
Forms: All Heat Types

Alternative formats available
upon request

APPLICANT'S NAME: _____

K.C. TRACKING NO: _____

Energy Residential Submittal Forms: All Heat Types

GENERAL INFORMATION

CHECK THE FOLLOWING:

JOB TYPE: ☐ New ☐ Addition ☐ Remodel ☐ Conditioned Sq.Ft. _____

OCCUPANCY: ☐ Single Family ☐ Multi-family ☐ Number of Units: _____
Number of Buildings: _____

HEATING FUEL: ☐ Electric ☐ LPG (Propane) ☐ Gas ☐ Other Fuels _____

HEATING SYSTEM: ☐ Forced Air ☐ Room Heaters ☐ Hydronic ☐ Other _____

WHOLE HOUSE VENTILATION SYSTEMS

PLACE A CHECK NEXT TO THE "WHOLE HOUSE VENTILATION SYSTEM" THAT WILL BE USED:

☐ Intermittent whole house ventilation using exhaust fans. ([FORM: # VIAQ 2](#))

NOTE: Exhaust only ventilation systems do not require outdoor air inlets if the home has a ducted forced air heating system that communicates with all habitable rooms and the interior doors are undercut to a minimum of 1/2 - inch above the surface of the finish floor covering.

☐ Intermittent whole house ventilation integrated with a forced-air system. ([FORM: # VIAQ 3](#))

☐ Intermittent whole house ventilation using a supply fan. ([FORM: # VIAQ 4](#))

☐ Intermittent whole house ventilation using a heat recovery ventilation system. ([FORM: # VIAQ 5](#))

☐ Engineered "whole house ventilation system" designed in compliance with section 302, WAC-51-13.

NOTE: In addition to the required "whole house ventilation system," "source specific exhaust ventilation" is required in each kitchen, bathroom, water closet, laundry room, indoor swimming pool, spa, and other rooms where excess water vapor or cooking odor is produced.

EXEMPT FROM WHOLE HOUSE VENTILATION SYSTEMS

IF APPLICABLE CHECK ONE OF THE FOLLOWING:

☐ Building additions with less than 500 square feet of conditioned floor area.

☐ Replacement of air-handling/conditioning equipment without altering or repairing the associated air distribution system.

VAPOR RETARDER

PLACE A CHECK NEXT TO THE TYPE OF "VAPOR RETARDER" THAT WILL BE USED:

FLOOR: ☐ 4 mil Poly ☐ Face Stapled Backed Batts ☐ Ext. T&G Plywood

WALL: ☐ 4 mil Poly ☐ Face Stapled Backed Batts ☐ PVA – Paint

CEILING: ☐ 4 mil Poly ☐ Face Stapled Backed Batts ☐ PVA – Paint

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Check out the DDES Web site at www.metrokc.gov/ddes

2001 WSEC Chapter 6 Qualification Form- Zone 1, Residential Prescriptive Options for All Heat Sources ^{0,1}

Instructions:

- 1) Carefully review the requirements for each of the options below. Choose an option that best suits your dwelling design. Glazing percentage typically determines which option to choose. Your building must match the selected option requirements without exceptions or substitutions.
- 2) Check ☒ the ☐ above the requirements of your option. Disregard components or equipment that do not apply to your project. Your permit will be processed more efficiently if you provide all of the requested information. Department staff can help you with general questions about this form.

Can't Comply? If none of the Prescriptive (Chapter 6) options are acceptable, consider the Component Performance (Chapter 5) Approach. The main advantage is flexibility to juggle individual R and U-factors as long as an overall maximum value isn't exceeded. Note that the Component Performance requirements are no less stringent than the Prescriptive requirements. Calculations may be performed with a 2001 WSEC Chapter 5 Residential Qualification Form, or by using an acceptable computer program such as WATTSUN.

CHECK <input checked="" type="checkbox"/> One ➔	OPT I	OPT II *	OPT III	Footnotes
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Glazing Maximum % of floor area ¹⁰	12%	15%	Unlimited Group R-3 Occupancy only	<p>*Reference Case</p> <p>0. Nominal R-values are for wood frame assemblies only or assemblies built in accordance with Section 601.1</p> <p>1. Minimum requirements for each option listed. For example, if a proposed design has a glazing ratio to the conditioned floor area of 13%, it shall comply with all of the requirements of the 15% glazing option (or higher). Proposed designs which cannot meet the specific requirements of a listed option may calculate compliance by Chapter 4 or 5 of this Code.</p> <p>2. Requirement applies to all ceilings except single rafter or joist vaulted ceilings.</p> <p>3. Requirement applicable only to single rafter or joist vaulted ceilings.</p> <p>4. Below grade walls shall be insulated either on the exterior to a minimum level of R-10, or on the interior to the same level as walls above grade. Exterior insulation installed on below grade walls shall be a water resistant material, manufactured for its intended use, and installed according to the manufacturers specifications. See Section 602.2.</p> <p>5. Floors over crawl spaces or exposed to ambient air conditions.</p> <p>6. Required slab perimeter insulation shall be a water resistant material, manufactured for its intended use, and installed according to manufacturer's specifications. See Section 602.4</p> <p>7. Not used in climate zone one.</p> <p>8. Not used in climate zone one.</p> <p>9. Doors, including all fire doors, shall be assigned default u-factors from Table 10-6C.</p> <p>10. Where a maximum glazing area is listed, the total glazing area (combined vertical + overhead) as a percent of gross conditioned floor area shall be less than or equal to that value. Overhead glazing with U-factor of U=0.40 or less is not included in glazing area limitations.</p> <p>11. Overhead glazing shall have U-factors determined in accordance with NFRC 100 or as specified in Section 502.1.5.</p> <p>12. Log and solid timber walls with a minimum average thickness of 3.5" are exempt from this insulation requirement.</p>
Vertical Glazing U-Factor	0.35	0.40	0.40	
Overhead Glazing U-Factor ¹¹	0.58	0.58	0.58	
Door U-factor ⁹ (or R-factor)	0.20 (R-5)	0.20 (R-5)	0.20 (R-5)	
Ceilings:				
With attics ²	R-38	R-38	R-38	
Vaulted ³	R-30	R-30	R-30	
Walls:				
above grade ¹²	R-15	R-21	R-21	
below grade ⁴				
interior or	R-15	R-21	R-21	
exterior	R-10	R-10	R-10	
Floor: ⁵	R-30	R-30	R-30	
Slab on grade: ⁶	R-10	R-10	R-10	

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2001 Residential WSEC Chapter 6: Window, Skylight and Door Schedules

Instructions: If you are using the prescriptive approach option 1 or 2 fill out the window and door schedules. Use actual NFRC tested U-factor data whenever possible, or use the appropriate WSEC Chapter 10 default table. Use the Glazing to Floor Area Calculation to determine the your particular Prescriptive Option.

[illegible]

Skylight Schedule				AREA x U-factor = UA Value				
Location (room)	Frame Type/ # of Panes	Manufacturer & Model (if known)	List Reference ¹ Source of U-factor	Size (h x w)	Quantity	Area (ft ²)	U-factor	UA Value
Total Skylight Area:							Skylight UA:	

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2001 Residential WSEC Chapter 6: Window, Skylight and Door Schedules

Door Schedule ²					AREA x U-VALUE = UA Value				
Location (room)	Type	Glass Area Ft ²	Single Pane?	Manufacturer/Model	Size (h x w)	Quantity	Door Area: include glass	U-factor	UA Value
		Enter Exempt Swinging Door Size here →							
Area of Door Glass:		<div style="border: 1px solid black; width: 50px; height: 20px;"></div>	Total Door Area:			<div style="border: 1px solid black; width: 50px; height: 20px;"></div>	Door UA:	<div style="border: 1px solid black; width: 50px; height: 20px;"></div>	

Glazing to Floor Area Calculation³

NOTE: Actual Single Pane Area plus Garden Window Area (as described in footnote #3) must not exceed 1% of the floor area.

(Window Area + Skylight Area⁴ + Door Glass + Single Pane Area + Garden Window Area) ÷ Conditioned Floor Area = Glazing/Floor %

(+ + + +) ÷ = %

Weighted Average Calculations

Total Window UA ÷ Total Window Area = Glazing U_o

Total Skylight UA ÷ Total Skylight Area = Glazing U_o

Total Door UA ÷ Total Door Area = Door U_o

1. Enter one of the following: WSEC Table 10-6A, B, C, D or E, or NFRC test. 2. One SWINGING DOOR, whether glass (such as a glass French door) or opaque (such as an ornamental panel door), of 24 square feet or less, may be excluded from the floor/glazing area percentage calculation and the door weighted average U-factor calculation. Use the top line of the Door Schedule for the one swinging door (NOT a slider) you wish to exclude from your calculations. 3. WSEC requires that single pane glazing and vinyl or wood framed double glazed garden windows be doubled for the glazing to floor area percentage calculation. Therefore, single pane windows and wood or vinyl framed double glazed garden window area is re-added to this equation. 4. Skylights with a U-factor of 0.40 or less may be omitted from this calculation.

2001 Residential WSEC Chapter 6: Heating Systems Sizing

☐ Prescriptive Heating System sizing:

- Electric Resistance (Baseboard / Unit Heaters) – Conditioned Square Footage X .005882 = Maximum KW Output.
- Other Fuels – Conditioned Square Footage X 20 = Maximum Btu Output

☐ Heating system sizing to be determined by an analysis consistent with section 503.2, WAC 51-11.

NOTE: Sizing limitations and exceptions shall comply with Section 503.2.2, WAC 51-11.

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